

What is Claimed Is:

1. A method for testing a network switch chip having an expansion port configured for transferring data according to a prescribed protocol, the method comprising:
  - first outputting the data from the expansion port according to the prescribed protocol;
  - converting the data from the prescribed protocol to a prescribed network protocol; and
  - second outputting the data according to the prescribed network protocol to a test device having an interface configured for receiving the data according to the prescribed network protocol.
2. The method of claim 1, wherein the prescribed protocol and the prescribed network protocol specify transfer of data at respective first and second data rates, the converting step including buffering the data between the first and second data rates.
3. The method of claim 2, wherein:
  - the first outputting step includes outputting the data according to the prescribed protocol using a burst-type transmission;
  - the second outputting step includes outputting the data according to the prescribed network protocol using a stream-type transmission; and
  - the buffering step includes buffering the data between the burst-type transmission and the stream-type transmission.
4. The method of claim 3, wherein:
  - the prescribed protocol corresponds to a burst-based bus protocol; and
  - the prescribed network protocol corresponds to IEEE 802.3-based media independent interface (MII) protocol.
5. The method of claim 1, wherein the converting step includes:
  - buffering the data output by the expansion port into a first first-in first-out (FIFO) buffer; and
  - converting the data in the first FIFO buffer using a field programmable gate array (FPGA) for transmission according to the prescribed network protocol.
6. The method of claim 5, wherein the first FIFO buffer is configured for storing at least one maximum size data frame according to the prescribed protocol.

7. The method of claim 2, further comprising:  
third outputting second data from the test device according to the prescribed network protocol;  
converting the second data from the prescribed network protocol to the prescribed protocol;  
and  
5 fourth outputting the second data according to the prescribed protocol to the expansion port.
8. The method of claim 7, wherein:  
the third outputting step includes outputting the second data according to the prescribed  
network protocol using a stream-type transmission;  
the fourth outputting step including outputting the second data according to the prescribed  
5 protocol using a burst-type transmission; and  
the second data converting step including buffering the second data between the stream-type  
transmission and the burst-type transmission.
9. The method of claim 8, wherein:  
the prescribed protocol corresponds to a burst-based bus protocol; and  
the prescribed network protocol corresponds to IEEE 802.3-based media independent interface  
(MII) protocol.  
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10. A test system for testing a network switch chip having an expansion port configured  
for transferring data according to a prescribed protocol, the system comprising:  
a test device configured for outputting and receiving data according to a media independent  
interface (MII) protocol; and  
5 a converter configured for converting the data between the MII protocol utilized by the test  
device and the prescribed protocol utilized by the expansion port for communication between the  
expansion port and the test device.
11. The system of claim 10, wherein the converter includes:  
a first first-in first-out (FIFO) buffer configured for receiving the data from the test device  
according to the MII protocol based on a stream-type transmission;  
a second FIFO configured for receiving second data from the expansion port according to the  
5 prescribed protocol according to a burst-type transmission; and

a field programmable gate array configured for outputting the data stored in the first FIFO according to the prescribed protocol using the burst-type transmission, and outputting the second data stored in the second FIFO according to the MII protocol according to a stream-type transmission.

12. The system of claim 11, wherein:  
the prescribed protocol corresponds to a burst-based bus protocol; and  
the prescribed network protocol corresponds to IEEE 802.3-based media independent interface (MII) protocol.

13. The system of claim 11, wherein the first and second FIFOs are configured for storing at least one maximum-size IEEE 802.3-based data packet and at least one maximum-size expansion port frame according to the prescribed protocol, respectively.

0970200-012901